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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/759,281	01/20/2004	Minoru Ando	Q79125	6860

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EXAMINER

MACCHIAROLO, PETER J

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/759,281	Applicant(s) ANDO ET AL.	
	Examiner Peter J. Macchiarolo	Art Unit 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01/20/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>05/04, 01/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 11-12 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on 06/15/2005. Accordingly, a first action on the merits for 1-10 appears below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 3, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by**

Applicant cited Blackmore (USPN 1701401: “Blackmore”).

3. Regarding claims 1 and 10, Blackmore shows in figures 1-6, a method of making a metallic shell for a spark plug, the metallic shell including a multi-stepped through hole, an intermediate tubular portion, a tip end side tubular portion disposed on a tip end side of the intermediate tubular portion and a base end side tubular portion disposed on a base end side of the intermediate, tubular portion, the through hole including, in the order from a base end side to a tip end side of the spark plug, a large diameter hole section (fig. 3; top 15), an intermediate diameter hole section (fig. 3; middle 11) smaller in diameter than the large diameter hole section and a small diameter hole section (fig. 3; bottom) smaller in diameter than the intermediate

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diameter hole section, the method comprising the steps of; cutting a metal pipe (9) that is used as a starting material to a predetermined length and thereby preparing a pipe-shaped blank; and subjecting the blank to a deformation process (column 1, ll. 35-41) and thereby forming the blank into the metallic shell, installing an insulator assembly having an insulator (17) in which a center electrode (not labeled) and a terminal member (not labeled) are installed in the metallic shell by inserting the insulator assembly into the metallic shell from the base end side thereof (col. 1, ll. 45-48); and joining an end of a ground electrode (not labeled) to a tip end of the metallic shell and making another end side of the ground electrode be disposed opposite to the center electrode.

4. Regarding claim 3, Blackmore shows in figure 3, an inner diameter of the pipe (9) is equal to a diameter of the small diameter hole section and smaller than a diameter of the large diameter hole section.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2, 5, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackmore in view of Fischer et al (CA 645083; "Fischer").**

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6. Regarding claim 2, Blackmore discloses the pipe is flared out to form the inner diameter of the large diameter hole section, thereby implying the inner diameter of the pipe is smaller than the large diameter hole section.

7. Blackmore is silent to the inner diameter of the pipe being larger than the small diameter hole section, but instead teaches they are equal.

8. However, Fischer shows that using a punch to extrude a blank allows for any desired flange configuration which will benefit the overall device, such as the inner diameter of the pipe being larger than the small diameter hole section.

9. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the spark plug of Blackmore with the pipe being larger than the small diameter hole section, to allow for proper operation and fit within several internal combustion engine configurations.

10. Regarding claims 5 and 6, Blackmore is silent to forming by extrusion the second, third, fourth, and fifth steps.

11. However, as discussed above, Fischer teaches that using a punch and a specific die to extrude a blank into a specific shape allows for a modular manufacturing process that can meet several different spark plug formations to fit a variety of engines.

12. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the spark plug of Blackmore with the extrusion steps to allow for operation and fit within several internal combustion engine configurations.

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13. **Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blackmore in view of Hamilton (USPN 1726264; "Hamilton").**

14. Regarding claim 4, Blackmore is silent to an outer diameter of the pipe is larger than that of the tip end side tubular portion of the metallic shell and smaller than that of the intermediate tubular portion.

15. However, modifying the machining process of the pipe to manufacture such a spark plug shell is well within the skill of one in the art. Furthermore, one of ordinary skill would arrive at this configuration to allow for a better internal securing configuration (internal shoulder), as evidenced by Hamilton.

16. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to manufacture the spark plug of Blackmore with the recited internal configuration to allow for a better internal securing configuration.

17. **Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blackmore.**

18. Regarding claims 7-9, Blackmore is silent to the exact dimensions of the final spark plug.

19. However, one of ordinary skill in the art understands that the final spark plug must have certain dimensions so as to properly fit into an internal combustion engine.

20. Furthermore, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the proper size of a component involves only routine skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

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21. Therefore, in view of the above discussion, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct Blackmore's spark plug with the recited dimensions for proper operation.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Macchiarolo whose telephone number is (571) 272-2375. The examiner can normally be reached on 8:30 - 5:00, M-F.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on (571) 272-2475. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



pjm



JOSEPH WILLIAMS
PRIMARY EXAMINER